Journal of Research on the Lepidoptera *17(3):170-171, 1978(80)*

A Study of the Meiotic Chromosomes of *Ixias Marianne* (Cramer) (Pieridae)

N. Nageswara Rao

Department of Zoology, Nagarjuna University, Nagarjuna Nagar, 522 510, Andhra Pradesh, India.

Abstract.—The haploid Chromosome number of *Ixias marianne* was determined as 28 which forms the first report in this genus from India. The mean of the terminalization coefficient and chiasma frequency are .912 and .989 respectively.

The genus *Ixias* is represented by three species in the Indian region: *marianne, pyrene* and *verna* (Talbot 1939). Although the chromosome numbers of some Indian members of the family Pieridae, to which *Ixias marianne* (Cramer) belongs, were reported by Gupta (1964) and Rishi (1973), none of the three Indian representatives of the genus *Ixias* were studied by them. Hence, this paper aims at reporting the chromosome number and certain details of meiosis of *Ixias marianne* (Cramer) which has not been reported heretofor in the genus *Ixias* from India.

All the material used for the present study was collected from the fields and hills around Perecherla, near Guntur town. Testes of adults were dissected in cold Ringer's solution and squashed in 2% acetic-orcein without prefixation. The preparations were made semipermanent by sealing the coverglasses to the slides.

Counts on well-spread metaphase I plates clearly show 28 bivalents (fig. 1). Most are dumb-bell shaped with almost terminalised chiasma. However, cross bivalents with single interstitial chiasma and ring bivalents with two terminal chiasmata were also noted in some preparations.

Maeki and Ae (1966) reported the haploid chromosome number of *Ixias pyrene familiaris* Butler from the Himalayan region as 28 of which seven bivalents are distinctly smaller than the remainder. Though the chromosome number of *I. marianne* agrees with the above related species, no such size distinction was observed among bivalents.

In spite of large number, smaller size and almost spherical shape of the chromosomes, an attempt has been made to record certain features of meiosis. Of 5656 bivalents observed in 202 nuclei from 10 specimens; 210 were cross bivalents, 132 ring bivalents and 213 separated into distinct univalents. The terminalization coefficients ranged fom .876 to .953 with a mean of .912 and the chiasma frequency

ranged from .964 to 1.029 with a mean of .989. By the time spermatocytes reach late diakinesis and early metaphase most of the bivalents assume the usual dumb-bell shape with a terminal chiasma.

The haploid chromosome number 28 of *Ixias marianne* deviates from 31 which is the modal number for both th family Pieridae and the order Lepidoptera.

I wish to acknowledge and thank Dr. A. S. Murthy for supervision, the authorities of Nagarjuna University for providing facilities, and the University Grants Commission (New Delhi) for financial support. I further wish to dedicate this paper to the memory of my father Shri N. Narayana Raju, who passed away Dec. 1, 1977.

Literature Cited

GUPTA, Y. 1964. Chromosomal studies in some Indian Lepidoptera. *Chromosoma,* 15: 540-561.

MAEKI, K and S. A. AE, 1966. A chromosome study of twentyeight species of Himalayan butterflies (Papilionidae and Pieridae). *Spec. Bull. Lep. Soc. Japan.* (2) 107-119.

RISHI, S. 1973. Chromosome numbers of thirty species of Indian Lepidoptera. *Genen en phaenen,* 16 (3): 119-122.

TALBOT, G. 1939. *The fauna of British India-Butterflies* I, Taylor and Franscis Ltd., London.

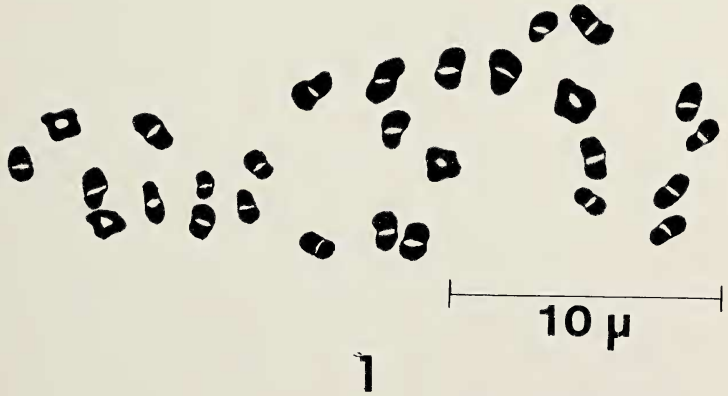

Fig. 1 — Metaphase I stage of *Ixias marianne* (Cramer).